

STREPTOCOCCAL GENETICS

Edited by

JOSEPH J. FERRETTI

*University of Oklahoma Health Science Center
Oklahoma City, Okla.*

ROY CURTISS III

*Washington University
St. Louis, Mo.*

Streptococcal Genetics presents a compilation of the most recent work in this important area, featuring over sixty contributions from the leading workers in the field. There has been a dramatic increase in interest and activity on this subject over the past few years, as investigators from all disciplines have embraced the new approaches and tools that genetic studies afford.

Initially, streptococcal genetics research centered on the study of gene transfer, antibiotic resistance, and plasmid biology. However, in recent years there has been an emphasis on genetic aspects of streptococcal virulence, pathogenicity, and metabolism. These studies are directed towards the major health problems associated with strep-

tococcal diseases, namely, rheumatic heart disease, glomerulonephritis, dental caries, neonatal meningitis and septicemia, pneumonia, and skin and throat infections. Additionally, basic studies aimed at the elucidation of streptococcal fermentation pathways are of prime importance for food processing and dairy industries.

This volume is divided into five major sections, each with an introduction presenting an overview and historical perspective for each of the topics. Useful appendixes give information on streptococcal cloning vectors, nucleotide sequences, and amino acids. An attractive volume for both new and established investigators. Based on the Second ASM Conference on Streptococcal Genetics, May 1986.

CONDENSED CONTENTS

I. Gene Transfer (8 chapters)

Streptococcus sex pheromones, plasmid-related conjugation, transposons and mutagenesis, cloning systems, restriction systems, genetic transformation.

II. Antibiotic Resistance (10 chapters)

Resistance determinants, genes and products, conjugative transposons, natural genetic-information transfer, plasmid-borne resistance genes and products.

III. Pathogenic Streptococci (23 chapters)

M proteins: structural and genetic relationships, phase variation, genes, transcriptional studies of phase variants, surface expression; immunoglobulin G receptor gene; human and animal isolates; homologous sequences and host specificity; DNA fingerprints; exotoxins: genes and characterizations; streptokinase and amidase; plasmid hemolysin/bacteriocin determinants; hemolysin production; virulence; surface protein; immunoglobulin A1 protease gene; competence control region.

IV. Oral Streptococci (7 chapters)

Adhesion fimbriae structural gene, virulence components, glucosyltransferase gene and product, surface proteins and virulence, β -D-fructosidase.

V. Lactic Acid Streptococci (8 chapters)

β -Galactosidase gene and plasmids, transformation by electroporation, spheroplast transfection, Tn919, metabolic traits, plasmid-encoded structural genes, lactose metabolism, bacteriophages, bacteriophage insensitivity mechanisms.

Appendixes: Cloning vectors, nucleotide sequences, amino acids.

Indexes.

Yes, send me *Streptococcal Genetics*.

Publication date: June 1987.

Hardcover (ISBN 0-914826-93-X)

Approximately 300 pages, illustrated, index.

Price

Quantity

Total cost

☐ Member: \$39.00

\$ _____

☐ Nonmember: \$49.00

\$ _____

Total amount of purchase

\$ _____

Allow 4-6 weeks after publication for delivery. Prices are subject to change without notice. Limit of 3 copies at member price. If ordering at the member price, give member number: _____.

Check one

☐ Payment enclosed

Card number _____

☐ MasterCard

Expiration date _____

☐ VISA

☐ American Express

Signature _____

Ship to:

Name _____

Address _____

City _____ State/Province _____

Zip/Postal code _____ Country _____

MR 9/87



AMERICAN SOCIETY FOR MICROBIOLOGY

Publication Sales, 1913 I Street, N.W., Washington, DC 20006 USA

Saskatchewan
Public Service
Commission

English

AS

AS

AS

AS

AS

AS

AS

AS

AS

BOOK
HOW

N U

D U S

R O B

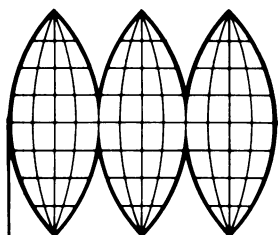
A

T E C H

Developing
Technology

ASP

A book that defines the problems, presents new data,
and indicates directions for future research:



LEGIONELLA

Proceedings of the 2nd International Symposium

Editors: Clyde Thornsberry
Albert Balows
James C. Feeley
Walter Jakubowski

LEGIONELLA is a multidisciplinary, international work reflecting the breadth of ongoing studies of legionella and legionellosis. Contributions from the medical community include reports of research and clinical practice in microbiology, immunology, epidemiology, pathology, infectious disease, and other specialties. From the environmental community come studies in environmental microbiology, ecology, and environmental engineering, including heating, air conditioning, refrigeration, and sanitary engineering.

The material is divided into six sections:

**CLINICAL FEATURES AND LABORATORY
DIAGNOSIS
MICROBIOLOGY
PATHOLOGY AND PATHOPHYSIOLOGY
IMMUNOLOGY
EPIDEMIOLOGY
ECOLOGY AND ENVIRONMENTAL CONTROL:**
Methods
Habitat
Ecological Interactions with Other Organisms
Disinfection

Each section contains one or more state-of-the-art lectures and a summary lecture, and résumés of a number of round table discussions are presented. The lecturers include Paul H. Edelstein, Harry N. Beaty, Sydney M. Finegold, Don J. Brenner, Paul Hoffman, Albert Balows, Washington C. Winn, Jr., A. Baskerville, Herman Friedman, Thomas Klein, Raymond Widen, William Johnson, Marcus A. Horwitz, R. van Furth, Claire V. Broome, Christopher L. R. Bartlett, David W. Fraser, James C. Feeley, C. B. Fliermans, and Ramon J. Seidler.

ORDERING INFORMATION

Publication date: February 1984. 371 pages.
Clothbound. ISBN: 0-914826-58-1.
Member: \$39.00. Nonmember: \$47.00.
Prices subject to change.
To order, complete the coupon and mail it to
the publisher.



**American Society
for Microbiology**
1913 I Street, N.W.
Washington, DC 20006
USA

Please send ____ copy(ies) of LEGIONELLA, @ \$39.00
(member); \$47.00 (nonmember). Payment enclosed.

Charge to my ☐ MasterCard ☐ VISA

Card Number _____ Expiration Date _____

Signature _____

Name _____

Address _____

City/State/Zip _____

Allow 4-6 weeks for delivery.

MR 9/87

Phosphate Metabolism and Cellular Regulation in Microorganisms

Editors:

Annamaria Torriani-Gorini, *Massachusetts Institute of Technology, Cambridge, Mass.;*

Frank G. Rothman, *Brown University, Providence, R.I.;*

Simon Silver, *University of Illinois College of Medicine, Chicago, Ill.;*

Andrew Wright, *Tufts University Medical School, Boston, Mass.;*

and Ezra Yagil, *Tel Aviv University, Tel Aviv, Israel*

This important new volume presents the latest progress on DNA sequencing and analysis of phosphate transport systems, the Pho regulon and other regulons governing "global metabolism" in the cell, polyphosphates and their synthesis and degradation, and the export of proteins across the cell membrane. *Phosphate Metabolism and Cellular Regulation in Microorganisms* will be of interest to anyone investigating bacterial metabolism and molecular biology; it will also be of general interest to those with environmental concerns and interests in phosphate metabolism in higher organisms, both plants and animals. The work contains the proceedings of an international symposium held in Concarneau, France, June 1986.

CONDENSED CONTENTS

I. Phosphate Regulation in *Escherichia coli* (5 chapters)

Pho regulon, alkaline phosphatase gene regulation/phosphate response, phosphate regulon regulatory genes, PhoE protein expression, acid phosphatase regulatory characteristics

II. Phosphate Regulation in Diverse Organisms (4 chapters)

Bacillus licheniformis alkaline phosphatase: proteins and genes; *Saccharomyces cerevisiae* phosphatase synthesis regulation, phosphatase multigene family, and acid phosphatase synthesis

III. Protein Secretion and Use of Alkaline Phosphatase (7 chapters)

E. coli: phosphate-binding-protein synthesis/export machinery, phospholipids in protein secretion/energetics, foreign-protein secretion into periplasm, *lamB* protein export; alkaline phosphatase: protein secretion analysis, enzymatic activity and cellular location, membrane protein insertion into cytoplasmic membrane

IV. Structure and Function of Alkaline Phosphatase (4 chapters)

Site-directed mutagenesis, crystal structure, multinuclear NMR analytical approaches, *E. coli* isozyme formation/molecular mechanism

V. Transport of Phosphate and Phosphorylated Compounds in *Escherichia coli* (7 chapters)

Pst system: molecular, genetic, biochemical analyses; Pit system;

PhoE protein structure/function; glycerol 3-phosphate transport: *glpT*-, *ugp*-, and *uhp*-dependent systems

VI. Mechanisms and Energetics of Phosphate Transport in Other Organisms (4 chapters)

Pseudomonas aeruginosa outer membrane protein P phosphate-binding site, sugar phosphate transport/anion exchange, solute/ion transport, *S. cerevisiae* phosphate uptake

VII. Phosphate Reserves and Energy Storage: Polyphosphates (5 chapters)

E. coli accumulation/metabolism, *Acinetobacter lwoffii* surface pool, *Propionibacterium shermanii* polyphosphate kinase and glucokinase, biosynthesis and transport in yeasts

VIII. Phosphate Reserves and Energy Storage: Pyrophosphates (4 chapters)

NMR methanogen studies/cyclic pyrophosphates, inorganic pyrophosphate-supplied metabolic energy, *Rhodospirillum rubrum* energy conversion, regulation of pyrophosphate metabolism in plants

IX. Global Regulatory Systems in Enteric Bacteria (6 chapters)

Bacterial carbon metabolism, nitrogen assimilation, stable-RNA transcription initiation, phosphorylated metabolites/alarmones, *E. coli* DNA damage/stress responses

X. Historical Perspective: *E. coli* alkaline phosphatase gene-protein relationships

Send me *Phosphate Metabolism and Cellular Regulation in Microorganisms*.

Publication date: July 1987.

Hardcover (ISBN 0-914826-94-8)

Approximately 330 pages, illustrated, index.

Price	Quantity	Total cost
<input type="checkbox"/> Member: \$39.00	_____	\$ _____
<input type="checkbox"/> Nonmember: \$49.00	_____	\$ _____
Total amount of purchase		\$ _____

Allow 4-6 weeks after publication for delivery. Prices are subject to change without notice. Limit of 3 copies at the member price. If ordering at the member price, give member number: _____.

Check one

☐ Payment enclosed

Card number _____

☐ MasterCard

Expiration date _____

☐ VISA

☐ American Express

Signature _____

Ship to:

Name _____

Address _____

City _____ State/Province _____

Zip/Postal code _____ Country _____

MR 9/87



AMERICAN SOCIETY FOR MICROBIOLOGY

Publication Sales, 1913 I Street, N.W., Washington, DC 20006 USA

ESCHERICHIA COLI AND SALMONELLA TYPHIMURIUM

CELLULAR AND MOLECULAR BIOLOGY

Editor in Chief: **Frederick C. Neidhardt**, *University of Michigan*

Editors: **John L. Ingraham**, *University of California, Davis*; **K. Brooks Low**, *Yale University*;
Boris Magasanik, *Massachusetts Institute of Technology*; **Moselio Schaechter**,
Tufts University School of Medicine; and **H. Edwin Umbarger**, *Purdue University*

"Not everyone is mindful of it, but cell biologists have two cells of interest: the one they are studying and *Escherichia coli*."

—From the Introduction

More is known about *Escherichia coli* and its close relative *Salmonella typhimurium* than about any other organism. These bacteria are likely to become the first free-living cells to have all their genes and gene products identified, their metabolic and assembly processes elucidated, and their regulatory and coordinating devices understood. Their convenient properties have made them the popular choices for research in bacteriophage functions and genetics, enzymatic function and adaptation, genetic analysis, biosynthetic pathways, bacterial physiology,

and regulation of gene expression. The wealth of information from several decades of intensive study has never before been assembled to permit an assessment of current knowledge and facilitate future research.

Written by over 100 leading biologists under the guidance of an editorial board representing diverse scientific disciplines, this two-volume set presents a comprehensive synthesis of the entire body of current knowledge on *E. coli* and *S. typhimurium*.

This landmark publication should prove fascinating and extremely helpful to all investigators and students of the most fundamental biological questions in genetics, molecular biology, biochemistry, and microbial and cellular physiology and regulation.

CONDENSED CONTENTS

PART I. MOLECULAR ARCHITECTURE AND ASSEMBLY OF CELL

PARTS: Chemical composition, outer and cytoplasmic membranes, murein sacculus, periplasm and protein secretion, flagella, fimbriae, nucleoids, and ribosomes

PART II: METABOLISM AND GENERAL PHYSIOLOGY

- Class I Reactions: Generation of Precursor Metabolites and Energy
- Class II Reactions: Conversion of Precursor Metabolites to Small-Molecule Building Blocks
- Class III Reactions: Formation and Processing of Polymers
- Energy for Cell Activities: Motility and chemotaxis, ATP-coupled solute transport, osmotic-shock-sensitive transport, growth yield and energy distribution

PART III: GENOME AND GENETICS

- The Genome: Linkage maps, gene-protein index, genome organization:

selectable phenotypes, native insertion sequence elements

- Genome alterations: Mutagenesis, general and site-specific recombination, DNA repair, transposition and transposable elements, insertion maps
- Gene transfer techniques: Conjugation (F factor, Hfr strains, F⁺ strains, F- and R-prime factors); transduction (generalized and specialized); DNA transformation methods
- Mapping techniques and measurement of chromosome size
- Useful host and mutant strains/recombinant-DNA techniques

PART IV: REGULATION OF GENE EXPRESSION

- General Mechanisms: Transcription initiation and attenuation, transcript elongation/termination, translation initiation, proteolysis
- Multigene System: Regulons; carbon/

nitrogen utilization; phosphate regulation; heat shock, SOS, and stringent responses; ribosomes and tRNA; amino-acyl-tRNA synthetases/translation factors

- Operon Regulation: Historical; maltose regulon; lactose, tryptophan, L-arabinose, galactose, proline, and D-serine deaminase operons

PART V. GROWTH OF CELLS AND CULTURES:

Growth modulation of cell characteristics; effects of temperature, pH, water, and pressure; chromosome replication regulation; cell division; cell cycle synthetic activities; bacterial variability and individuality

PART VI: ECOLOGY, EVOLUTION, AND POPULATION STRUCTURE:

Colicins and Col plasmids, natural genetic structure/variation, enteric-bacteria evolutionary history

A "must" for today's science laboratory or library

Please send me *Escherichia coli* and *Salmonella typhimurium: Cellular and Molecular Biology*.

Publication date: June 1987

Two volumes, 1,654 pages plus index, illustrated.

Check price	Quantity	Total cost
Hardcover (ISBN 0-914826-89-1)		
<input type="checkbox"/> Member price: \$61.00	_____	\$ _____
<input type="checkbox"/> Nonmember price: \$85.00	_____	\$ _____
Softcover (ISBN 0-914826-85-9)		
<input type="checkbox"/> Member price: \$51.00	_____	\$ _____
<input type="checkbox"/> Nonmember price: \$75.00	_____	\$ _____
Total amount of purchase		\$ _____

Allow 4-6 weeks after publication for delivery. Prices are subject to change without notice. Limit of 3 copies at the member price. If ordering at the member price, give member number: _____.

Check one	Card number _____
<input type="checkbox"/> Payment enclosed	Expiration date _____
<input type="checkbox"/> MasterCard	Signature _____
<input type="checkbox"/> VISA	
<input type="checkbox"/> American Express	
Name _____	
Address _____	
City _____	State/Province _____
Zip/Postal code _____	Country _____



AMERICAN SOCIETY FOR MICROBIOLOGY

Publication Sales, 1913 I Street, N.W., Washington, DC 20006 USA

MR 9/87